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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,921	03/20/2001	Giao Vinh Nguyen	0055-IS	9141

7590

03/27/2002

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EXAMINER

FOROHAR, FARHAD

ART UNIT

PAPER NUMBER

1621

DATE MAILED: 03/27/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/812,921

Applicant(s)

NGUYEN ET AL.

Examiner

farhad

forohar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

Claim 4 is objected to because of the following informalities: The term "thereof.." should be changed to "thereof.". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 2, and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of terms "about" and "range of from about" render claims indefinite. Correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gosser et al (US 4,255,343). In brief, the present invention describes a process of reacting an alpha-olefin (with 4 to 20 carbons) with a monocyclic aromatic hydrocarbon in the presence of an alkane sulfonic acid to obtain the corresponding alkylated aromatic product.

Gosser et al teaches a process whereby anthracene is **monoalkylated** to a 2-*t*-alkylantracene, wherein the alkyl group contains at least four carbon atoms (Col.1:30-34). Gosser et al specifically teaches an alkylation process comprising of treating a sample of anthracene with 2-methyl-1-undecene in the presence of methanesulfonic acid to obtain a mixture of 2-*t*-dodecylanthracenes (Col. 10:5-35). The examiner understands that anthracene is a polycyclic (not a monocyclic) ring system, but what is important is that anthracene is a hydrocarbon molecule which is monoalkylated with an olefin in the presence of methane sulfonic acid. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the process described by Gosser et al for alkylation of other hydrocarbons such as the monocyclic aromatic hydrocarbons. Doing so would provide a new process for monoalkylation of aromatic compounds free of unwanted polyalkylation products.

6. The prior art (Onopchenko et al, US 5,208,390) made of record and not relied on is considered pertinent to applicant's disclosure. Onopchenko et al discloses alkylation

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of aromatic alcohols with oligomers of 1-decne in the presence of methansulfonic acid (Col. 8:54-65).

7. The examiner notes that the data provided in the experimental section indicate differences between the alkylation of aromatic compounds with the conventional Friedel-Crafts process and the alkylation by the process of the invention. For example, the table in page 13 of the specification indicates that the conventional Friedel-Crafts alkylation provides 20-25% of dialkylarene whereas the alkylation by the present invention provides less than 3% of dialkylarene. The significance of these differences is not covered in the claims in their present forms.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhad Foroohar. The examiner can normally be reached on Monday-Friday between the hours of 8:00 a.m. and 5:00 p.m. at (703) 305-1022.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter, SPE of Art Unit 1623, may be reached at (703) 308-4532. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4426.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4556.

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F.F.

March 21, 2002



PAUL J. KILLOS  
PRIMARY EXAMINER